a light implication of the left ear; on the following day there was a slight further rise in temperature and a copious purulent discharge from the right ear exhibiting, both microscopically and by culture, staphylococcus, streptococcus, and psuedodiphtheria bacillus. The congestion of the left middle ear rapidly decreased with an ultimate return to normal, but in the right ear continued and increased, but without evidence of intracranial complications. The urine, as examined when the case was first seen, was practically normal, without a trace of albumin or of sugar, but on the seventh day, under the same dietary conditions as before, a large percentage of sugar was found in the urine. In the subsequent course of the case, with a gradual decrease in the local, aural, disturbance, the percentage of sugar proportionately decreased, and finally disappeared not withstanding a resumption of the ordinary diet which had, for a time, been suspended. Beginning with the investigations of Claude Bernard upon the effect of injury in the region of the floor of the fourth ventricle upon sugar elimination, and following through the clinical literature of the subject, Zimmermann concludes that suppurative inflammation of the middle ear, even when it does not extend beyond the boundary of the temporal bone, especially at the acme of its clinical evidence of activity, may be the cause of a transitory glycosuria which should in no way be confounded with, or lead to an oversight of, the really serious renal lesion of which this symptom might be an evidence.

PATHOLOGY AND BACTERIOLOGY

UNDER THE CHARGE OF

JOHN McCRAE, M.D., M.R C.P.,

LECTURER ON PATHOLOGY AND CLINICAL MEDICINE, MC GILL UNIVERSITY, MONTREAL; SOME TIME PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF VERMONT, BURLINGTON, VERMONT; SENIOR ASSISTANT PHYSICIAN, ROYAL VICTORIA HOSPITAL, MONTREAL.

The Bordet-Gengou Bacillus of Whooping Cough.—MALLORY, HORNOR, and HENDERSON (*Jour. Med. Research,* March 1913) have completed the proof according to Koch's postulates that the recently described bacillus is the actual cause of whooping cough. They have been able from sputum to obtain pure cultures, to produce the lesions which they have shown to be characteristic in young animals, and in four instances have obtained the organism again from these subjects in pure cultures. They consider that a vaccine or antitoxin is probably within reach.

The Effect of the Spleen and Splenic Extract upon Malignant Tumors.—OSER and PRIBRAM, from Prof. v. Eiselsberg's clinic (*Zeitschr. f. Exper. Path. u. Ther.,* January, 1913, Band xii, Heft 2) undertook experimental work upon the effects that can be produced on malignant tumors by the absence of the spleen as well as by splenic a light implication of the left ear; on the following day there was a slight further rise in temperature and a copious purulent discharge from the right ear exhibiting, both microscopically and by culture, staphylococcus, streptococcus, and psuedodiphtheria bacillus. The congestion of the left middle ear rapidly decreased with an ultimate return to normal, but in the right ear continued and increased, but without evidence of intracranial complications. The urine, as examined when the case was first seen, was practically normal, without a trace of albumin or of sugar, but on the seventh day, under the same dietary conditions as before, a large percentage of sugar was found in the urine. In the subsequent course of the case, with a gradual decrease in the local, aural, disturbance, the percentage of sugar proportionately decreased, and finally disappeared not withstanding a resumption of the ordinary diet which had, for a time, been suspended. Beginning with the investigations of Claude Bernard upon the effect of injury in the region of the floor of the fourth ventricle upon sugar elimination, and following through the clinical literature of the subject, Zimmermann concludes that suppurative inflammation of the middle ear, even when it does not extend beyond the boundary of the temporal bone, especially at the acme of its clinical evidence of activity, may be the cause of a transitory glycosuria which should in no way be confounded with, or lead to an oversight of, the really serious renal lesion of which this symptom might be an evidence.

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The Effect of the Spleen and Splenic Extract upon Malignant Tumors.—Oser and Pribram, from Prof. v. Eiselsberg's clinic (*Zeitschr. f. Exper. Path. u. Ther.,* January, 1913, Band xii, Heft 2) undertook experimental work upon the effects that can be produced on malignant tumors by the absence of the spleen as well as by splenic extracts. Oestrich had supposed that chondroitin-sulphuric acid was responsible for certain favorable effects on carcinomatous growths, and Oser and Pribram used his medium, composed of sodium chondroitin-sulphate and β-eucaine, upon a series of patients, but were entirely disappointed by the lack of good results. Considering that the spleen is almost as efficient as the bone marrow as a site of formation for antibodies, and that agglutinins can be demonstrated in the spleen earlier than in the blood, Braunstein obtained good results by removing the sterile spleen from cancer-mice and injecting the extract of the spleen in salt solution into other cancer-mice. He first used mice which had been injected with carcinoma, and removed the spleen before any tumor appeared. Of other cancer-mice so injected, one-fourth of those surviving showed tumor recession. One-third died of the injection. When he took the spleen from mice with well developed tumors, 6 of 15 mice injected died, but 5 of the remaining 11 showed recession. Yet again, he took the spleen from mice injected intraperitoneally repeatedly with carcinoma and sarcoma extract, four to six days earlier; this was injected into 45 cancer-mice with 3 deaths; in 6 recession of growth occurred, in 3 cessation of growth. Of 7 sarcoma-rats similarly tested, 6 showed regression. Braunstein's conclusions were that the spleen possesses a highly developed power of resistance against tumor growth, while, on the contrary, splenectomized animals are more liable than normal animals to the inroads of malignant growth. Rohdenberg and Johnston made observations that were parallel upon the thymus, pancreas, spleen, hypophysis, and testes, showing that after extirpation of the thyroid, thymus or testes the animal had a lessened resistance to carcinoma. Oser and Pribram's experiments support the views of Braunstein, and they show measurements and pictures of tumors indicating regression, and also the comparatively quicker growth of tumors in previously splenectomized animals. Spleen extract was efficient in the possession of antibodies, while blood removed at the same time failed to show such qualities.

Anaphylotoxin, Peptotoxin, and Anaphylaxis. — BESREDKA, STRÖBEL, and JUPILLE (*Annal. de l'Inst. Pasteur,* March, 1913, xxvii, No. 3) give details of some interesting experiments upon anaphylotoxine, a name which Friedberger gives to what he supposes to be the active agent in anaphylaxis; he considers that the anaphylactic state of an animal with regard to an albumin is due to the appearance of precipitin in its serum, and anaphylactic shock is the result of combination of the precipitin with the alexine of the animal. This being the case, one had only to inject an unprepared animal with the test-tube preparation of precipitin and alexin, and the result showed that the intravenous injection was highly toxic to the animal. This substance Friedberger called *anaphylotoxine.* In the words of Besredka, Ströbel, and Jupille, "the fortune of anaphylotoxin was made, and almost any bacillus, however slightly pathogenic, could apparently be proved to possess its anaphylotoxin." We were in a fair way to find that even infectious diseases were the work, not of specific pathogenic agents so much as of anaphylotoxin. Besredka, Ströbel, and Jupille have endeavored to stem the triumphant march of the ana-